

Abstract of the Disclosure

The multistage submersible axial-flow pump may be successfully used, in particular, in systems of water intake, in oil and gas producing branches of industry, in mining, etc., with the purpose to lift stratal liquids and gas-liquid mixtures with increased gas content from boreholes.

This pump contains axial stages arranged sequentially on the shaft inside casing. Each of these stages contains an impeller and stator guide vanes. The blades are arranged at lateral surface of the impeller hub, along the helical line. The inlet edges of blades are rounded, the inclination angle of blades relative to the face surfaces of the hub obey the law

$$\beta_{bl}(r_i) = \arctg\left(\frac{S}{2 \times \pi \times r_i}\right),$$

where $\beta_{bl}(r_i)$ – inclination angle of blades at the radius r_i ;

S – lead of helix;

r_i – radius measured from the impeller axis till the current point at the blade surface.

Guide vanes consist of a hub with radial vanes inserted at its lateral surface.

Advantages of the Pump of Suggested Design

- ◆ Increase of manufacturability and decrease of labor consumption.
- ◆ Opportunity to automatize the production process.
- ◆ Increase of head and efficiency.
- ◆ Increase of reliability and durability due to ensuring stable operation when pumping gas-liquid mixtures with increased gas content.
- ◆ Opportunity of wide application in oil and gas producing branches of industry, in mining, with high performance characteristics.